REMARKS

Applicant gratefully acknowledges the Examiner's withdrawal of the objection to the specification. Claims 1-18 are currently pending in this application. By this amendment, claims 9-12, and 14-18 are amended for the Examiner's consideration. Claims 1-8 and 13 are cancelled without prejudice or disclaimer. Claims 9, 12, and 14 are the remaining independent claims. Applicant respectfully submits that the above amendments do not add new matter to the application and are fully supported by the specification.

In view of the above amendments and the following Remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Preliminary Matters

An initial office action was issued on May 20, 2004 and, prior to applicant filing a response, a supplemental office action was issued on July 28, 2004. Applicant believes that the 3 month period response extends from the date of the supplemental office action dated July 28, 2004, making the 3 month period for responding due on October 28, 2004.

Applicant believes that a one (1) month extension of time is required at this time extending the period for responding to November 28, 2004. A petition for a one-month extension of time is attached hereto. If further extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for under 37 C.F.R. § 1.136(a). Applicant believes that no further fees for net addition of claims are required

at this time. Any fees required for extensions of time and any fees for the net addition of claims are hereby authorized to be charged to Deposit Account No. 503310.

Please note that a new power of attorney to the undersigned attorney for this application was filed on October 12, 2004.

Election/Restriction

Applicant acknowledges that claim 13 has been withdrawn from consideration and has been cancelled by this amendment.

Rejections Under 35 U.S.C. § 102/ § 103

Claims 1-6, 9-11 and 14-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U. S. Patent No. 5,888,469 issued to Stiller, et al., ("Stiller") or in the alternative, under 35 U.S.C. § 103(a) as obvious over the Stiller. Of these claims, only claims 9-11 and 14-18 are pending. Applicant respectfully traverses this rejection for at least the following reasons.

The Examiner readily acknowledges that the claimed dielectric constant and electrical resistivity of claims 9 and 14 are not present in Stiller. Office Action at Page 4. However, the Examiner asserts that the claimed dielectric constant and electrical resistivity of claims 9 and 14 are inherent properties in the material of Stiller because Stiller and the Applicant "appear to use the same starting material bituminous coals that have been comminuted to an appropriate particle size . . . to form carbon foam." Office Action, Page 3-4. The Examiner reasons that because the same starting materials are used, the structure of the resulting materials are inherently the same

and has cited to In re Spada for the proposition that identical chemical compositions can not have mutually exclusive properties. Applicant respectfully disagrees for the following reasons.

Applicants wish to point out that bituminous coal is a complex mixture of a variety of chemical compositions that can vary between different types of bituminous coal. Turning to the cited Stiller reference, Stiller extracts a specific, particular chemical fraction of material from bituminous coal particles. It is this extracted material that is then heated and used to form a material. In substantial contrast, Applicant directly heats the original (non-extracted) bituminous coal particles under conditions to form a carbon foam. Accordingly, from the very beginning Stiller and the Applicant use different starting materials that do not have identical chemical compositions. Because Applicant's and Stiller's starting materials are not the same and do not have the same chemical compositions, it cannot be assumed that the materials produced from these different starting materials would inherently have the same properties. Accordingly, Applicant respectfully submits that the Stiller reference would not inherently provide the structure of independent claim 9 or 14.

Furthermore, while the Examiner has cited many similarities between the claimed invention and Stiller, the Examiner assumes that differences in processing which produce the carbon foam of the claimed invention and the material of Stiller has no significance. Although the resulting carbon foam of the claimed invention and the material of Stiller may have similar chemical compositions, the processes used are different. In particular, the Applicant's specification states "[T]he production of carbon foams of [the claimed invention] is controlled by restriction of the temperature of the carbonizing step to a relatively narrow range of from about 600°C to about 800°C." Applicant's Specification at page 5, lines 1-4.

In contrast, Stiller discloses a carbonizing temperature of 975°C to 1025°C. *See*, the Stiller '469 patent at column 3, line 10 and column 4, lines 36-37. With reference to Applicant's Figure 2 and the discussion on pages 3, line 23 to page 4, line 4 of the specification, the Examiner will note that carbonizing in the 975 to 1025°C temperature range as taught by Stiller does not produce a product having an electrical resistivity in the claimed range. Carbonizing at these temperatures, according to Applicant's specification will produce a material having a resistivity of less than $1.E^{-01}$ ohm-cm. Therefore, since the processes used to produce the carbon foam of the claimed invention and the carbon foam of the Stiller '469 patent are different; the properties of the carbon foams are also different. Applicant submits that although two products may have identical chemical compositions, if the processes used to produce the products are different; the products may have different properties. An extreme example of this is the difference between diamond and graphite. Diamond and graphite are made by different methods yet have virtually identical chemical compositions. The properties of a diamond are different from graphite even though they have nearly the same chemical composition. In the present case, the composition of the starting material is different from Stiller, the processing conditions are different than those of Stiller. Accordingly, Applicant submits that because the starting materials are different and the process used to make the carbon foam are different, the material of Stiller cannot be assumed to inherently possess the properties of a dielectric constant in the range of about 2 to about 6 or an electrical resistivity in the range of about $1.E^{00}$ ohm-cm to about $1.E^{06}$ ohm-cm as required by claims 9 and 14.

With respect to independent claim 9, Stiller is completely silent with respect to heating particulate coal in a pressurized non-oxidizing atmosphere having a pressure in the range of

about 50 psi to about 500 psi, to a temperature ranging from about 300 to about 600°C to form a green foam. As discussed above Stiller does not heat coal particles to from a material. Stiller heats a specific material that was extracted from coal particles. It is this extract that is used to form the resulting material.

Accordingly, Since the all the limitations of claim 9 and 14 are not present in Stiller, Applicant respectfully requests withdrawal of the 35 U.S.C. § 102(b) / § 103(a) rejection of claims 9 and 14. Since the prior art of record does not disclose or suggest all the features of the claimed invention, Applicant respectfully submits that independent claims 9 and 14, and all the claims that depend therefrom are allowable.

Next, the Examiner has maintained the rejection of claims 1, 2, 12, 14 and 15 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 5,213,678, issued to McCullough, Jr. et al., ("McCullough") or in the alternative under 35 U.S.C. § 103(a) as obvious over the McCullough '678 patent. Currently, only claims 12, 14, and 15 are pending.

The Applicant submits that nowhere does McCullough teach, disclose or suggest carbon foam having the properties of a dielectric constant in the range of about 2 to about 6 and an electrical resistivity in the range of about 1×10^0 ohm-cm to about 1×10^6 ohm-cm. First, the Examiner acknowledges that McCullough does not disclose a dielectric constant. Office Action at page 5. Next, the Examiner argues, however, that McCullough discloses a "carbonaceous foam [having] a resistivity of 4×10^6 to 4×10^3 ohm-cm," which is within the claimed range. Office Action at page 5. Applicant respectfully disagrees. More accurately, the resistivity values disclosed by McCullough are actually the resistivity values for the *tow of fibers* and not the resistivity values for carbon foam. *See* column 5, lines 62-66. Therefore, Applicant submits

that McCullough patent fails to teach or suggest each and every element of the claimed invention.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 102(a) / § 103(a) rejection of claims 12, 14 and 15. Since the prior art of record does not disclose or suggest all the features of the claimed invention, Applicant respectfully submits that independent claims 12 and 14 and all the claims that depend therefrom are allowable.

Further, claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Stiller in view of U.S. Patent No. 6,673,328, issued to Klett et al., ("Klett"). Applicant traverses for at least the following reasons.

The Examiner argues that Stiller "discloses that the carbon foam is suitable for use in thermal insulating application." *Id.* at page 5. Moreover, the Examiner argues that "Klett discloses the cooled cold box containing a carbon foam within the box," concluding that "it would have been obvious to one having skill in the art...to use the carbonaceous foam in the cooled cold box of Klett...to provide [a] cooling effect." *Id.* Applicant respectfully directs the Examiner's attention to claim 12. Claim 12 recites to carbon foam located on the surface of a body that is capable of absorbing radar emissions and comprises the properties of a dielectric constant in the range of about 2 to about 6 and an electrical resistivity in the range of about 1 x 10^0 ohm-cm to about 1 x 10^6 ohm-cm. Nowhere is claim 12 related to thermal insulating properties as argued by the Examiner.

Nonetheless, the Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness because the cited art references do not teach each and every element of the claimed invention. Specifically, Stiller fails to teach or suggest, as discussed above, the features

of a carbon foam that is capable of absorbing radar emissions and further comprises the properties of a dielectric constant in the range of about 2 to about 6 and an electrical resistivity in the range of about 1 x 10^0 ohm-cm to about 1 x 10^6 ohm-cm.

Applicant submits that the addition of Klett fails to cure the deficiencies of Stiller. Specifically, nowhere does the Klett reference teach or suggest carbon foam having the claimed properties as required by claim 12. Accordingly even if the combination of Stiller and Klett were proper, the combination would still fail to teach each and every limitation of claim 12.

Therefore, since neither Stiller nor Klett, either singly or in combination, teach or suggest each and every element of independent claim 12, the Examiner has failed to establish a *prima facie* case for obviousness. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the present rejection of claim 12 under 35 U.S.C. § 103(a).

In addition, claims 1, 2, 12, 14 -15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,525,988, issued to Perkins et al., ("Perkins") in view of McCullough. Of these claims, only claims 12, 14 and 15 are pending. Applicant traverses this rejection for at least the following reasons.

Applicant respectfully submits that Perkins fails to teach or suggest a carbon foam that is capable of absorbing radar emissions and has a dielectric constant ranging from about 2 to about 6 and an electrical resistivity ranging from about 1 x 10^0 ohm-cm to about 1 x 10^6 ohm-cm. In contrast, Perkins discloses a material where carbonaceous or graphitic materials are dispersed through a flexible foam. The material disclosed by Perkins is a flexible plastic foam with carbon particles dispersed throughout, which is completely different than carbon foam of the claimed invention.

The addition of McCullough does not cure the deficiencies of Perkins. Nowhere does McCullough teach or suggest carbon foam having the properties of a dielectric constant ranging from about 2 to about 6 and an electrical resistivity ranging from about 1×10^0 ohm-cm to about 1×10^6 ohm-cm. Again, the Examiner argues that McCullough discloses a "carbonaceous foam [having] a resistivity of $4 \times 10^6$to 4×10^3 ohm-cm," which is within the claimed range. *Id.* at page 6. As discussed above, the resistivity values disclosed by McCullough are actually resistivity values for the tow of fibers and not the resistivity values for carbon foam. Therefore, nowhere does McCullough teach or suggest an electrical resistivity ranging from about 1×10^0 ohm-cm to about 1×10^6 ohm-cm as required by the claimed invention.

Therefore, since neither Perkins nor McCullough, either singly or in combination, teach or suggest each and every element of independent claims 12 and 14, the Examiner has failed to establish a *prima facie* case for obviousness. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the present rejection of claims 12, 14 and 15 under 35 U.S.C. § 103(a).

Since the prior art of record does not disclose or suggest all the features of the claimed invention, Applicant respectfully submits that independent claims 12 and 14, and all the claims that depend therefrom are allowable.

Rejection under Obviousness – Type Double Patenting

The Examiner has rejected claims 1-6, 9-11 and 14-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application Serial No. 09/976,172. Applicant respectfully requests that this rejection

be held in abeyance until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection.

Further, the Examiner has rejected claim 12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application Serial No. 09/976,172 in view of the Klett '328 patent. Applicant respectfully requests that this rejection be held in abeyance until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection.

In addition, the Examiner has rejected claims 1-6, 9-11 and 14-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,656,238. Applicant respectfully requests that this rejection be held in abeyance until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection.

Moreover, the Examiner has rejected claim 12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,656,238 in view of the Klett '328 patent. Applicant respectfully requests that this rejection be held in abeyance until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection.

Also the Examiner has rejected claims 1-6, 9-11 and 14-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,656, 239. Applicant respectfully requests that this rejection be held in abeyance

until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection.

Finally, the Examiner has rejected claims 12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,656,239 in view of the Klett '328 patent. Applicant respectfully requests that this rejection be held in abeyance until allowable claims are indicated by the Examiner. Subsequently, if necessary, the Applicant will file a terminal disclaimer to overcome the rejection

CONCLUSION

Applicant submits that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicant respectfully submits that all pending claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is thus respectfully requested to pass the above application to issue.

Should the Examiner feel that there are any issues outstanding after consideration of this response; the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution. Prompt and favorable consideration of this Reply is respectfully requested. Applicant respectfully requests that a timely Notice of Allowance be issued for this application.

Respectfully submitted,

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